THE PHYTOLOGIST.

No. XXXV. | APRIL, MDCCCXLIV. | PRICE 1s.

ART. CCV. — *Notes on Botanical Classification.*

By EDWARD FORSTER, Esq., V.P.L.S., &c.

Woodford, March 13, 1844.

SIR,

On reading the 'Remarks on Botanical Classification,' by Mr. Thomas Edmonston, jun. (Phytol. 759), in which there is so much good sense and clear understanding, I felt inclined to express my gratification; but on reflection it appeared to me that his observations wanted no additional strength. The case is now altered by the Article 199, in No. 34, called a Reply, (Phytol. 885), which arouses an old botanist to stand forth in defence of one who has so well pointed out the use of a simple artificial scheme. It may not be amiss first to remark that a misunderstanding has long been prevalent with regard to the words artificial and natural, as applied to botanical systems; the original meaning was, that in one, the *evident affinity* is not so apparent as in the other; it surely cannot be denied that the *sexual* system of Linnæus is really as natural as those of Ray, Jussieu, DeCandolle &c., which are founded on other characters. I fear Linnæus himself was the author of the misnomer.

On looking carefully at the first paragraph in p. 886, I am well convinced that Mr. Edmonston and Dr. Ayres differ only in words, the latter using species in a sense not usual. He begins by entirely dissenting from Mr. Edmonston's assertion that "Nature creates species;"* then follows, "for it is easy to perceive that the term species is applied to an assemblage of individuals, which, from their great resemblance to each other and their capability of propagating their kind, are called species." A little further on we have, "I contend that Nature simply created individuals capable of propagating their kind. And if we trust the Mosaic account of the creation, we shall see reason to believe that plants as well as animals were individually created." This is all we want, — our term species meaning the progeny of the first-created individuals. Certainly, the capability of thus propagating their kind is a very strong presumptive proof that they are so. The passage goes on, "It is evident that the term species applies to one of the primary inductions from a comparison of individuals; not that a species has any absolute existence, but is merely the conception or expression of the points of resemblance of a certain number of individuals bearing the greatest resemblance to each other. Another argument against Mr. Edmonston's view is the fact of the existence of varieties; a still lower induction from individuals." Whatever is meant by this scholastic induction, it would rather seem to contradict the writer's own words quoted above, but I am doubtful if I understand it. The fact of the existence of varieties is surely no argument against Mr. Edmonston's view.

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* A misquotation: the passage is, "Nature creates only species.

Again, "The quotation from Dr. Lindley's Key to Botany is not sufficiently ample, Mr. Edmonston should have added the next paragraph." "'What we call the characters of plants are merely the signs by which we judge of affinity, and all the groups into which plants are thrown, are in *one* sense artificial, inasmuch as Nature recognizes no such groups. Nevertheless, consisting in all cases of species very closely allied to each other, they are in another sense natural.' The addition of the last sentence very much alters our notion of Dr. Lindley's expression; for now he implies that Nature has not created species, orders, genera, or other groups as such." This quotation from Lindley surely very much confirms Mr. Edmonston's argument. It is quite clear that Lindley uses the word species exactly as I have endeavoured to show is the true meaning. If the passage be read with attention, it will be seen that he refers to groups of species, and by no means implies that Nature has *not* created species, which word is introduced by Dr. Ayres in his inference; Lindley's meaning being that the arrangement of species into genera is the work of man, founded on natural affinities.

It might perhaps have been rather more accurate if Mr. Edmonston had said, Nature created species, instead of using the present tense; by Nature no man in his senses can suppose that he means any other than Divine power.

Having, I trust, shown that Mr. Edmonston and Dr. Ayres, both of whom are unknown to me, except by their writings in 'The Phytologist' do not differ except in the use of words, I am led to lament, that *fashionable* botanists of the present day are in the constant habit of using words in a new sense. We can scarcely meet one, in whose conversation the word *form* is not introduced by hook or by crook, for species, genus, group or anything else. Our language does not want it, but for variety it is not improper. I am ready to allow that were it not for the indecent want of reverence in attributing to Nature, the working by *carpenter's rule,* the term normal form is quite as melodious as *type of the species* hitherto adopted for the usual and regular habit or *form* of a plant from which the specific distinctive characters ought to be taken; and is equally inaccurate. Normal as applied by legislators to *model* prisons and schools, has Latin authority; in the case of plants model will hardly do.

I hope the above explanation of the word species may tend to check young men from talking of "making species," or boasting of "exalting varieties to the rank of species," neither of which is in the power of mortal man. I will now conclude with saying, far be it from the most ardent admirers of the great Linnæus, or the zealous defenders of his sexual, commonly called artificial system, to disparage any others, founded on analogy; much less to discourage the beautiful study of Physiology, without the knowledge of which no man can become a thoroughly scientific botanist.

I am, Sir.
Yours sincerely,
EDWARD FORSTER.

To the Editor of 'The Phytologist.'

ART. CCVII. — *List of a few of the Botanical Rarities collected in Scotland in* 1843. By WILLIAM GARDINER, Esq.

LYCHNIS viscaria, L. Gathered in a new station, in July, namely, wooded banks of the Ericht near Craighall, about two miles above Blairgowrie, Perthshire. Only two or three specimens in flower.

Lychnis alpina, L. This very interesting and rare species I collected on the summit of Culrannoch, one of the Clova mountains, about 3200 feet high, in the midst of a terrific hail-storm in July. It grew on wet stony ground, associated with Armeria maritima, *β. alpina.*

Linnæa borealis, Gronov. Plentiful among the mossy rocks at the base of Craig Maid, in Glen Dole, Clova, July 28, bearing abundantly its graceful snowy and rose-tinted blossoms, loading the summer air with their rich perfume.

Sonchus alpinus, L. This was culled from two stations in Glen Dole in July and August, carefully leaving the roots, and observed in several other places about the rocks of Craig Maid but inaccessible.

Erigeron alpinus, L. In Caulochen and in Glen Dole, high on the rocks, but in small quantity.

Moneses grandiflora, Salisb. Moist shady woods, Scone, Perthshire, flowering in June, but very deficient in size this season.

Pyrola rotundifolia, L. On the rocks of Craig Maid, Glen Dole, at a good elevation, associated with P. secunda, but neither of them in plenty.

Asperugo procumbens, L. Found in June on a bank near Aucmithie, coast of Forfarshire.

Veronica alpina, L. This was found abundantly in Caulochenglen in July, and more sparingly in Glen Dole, both in flower and fruit. It loves to grow about the sides of rills, and on the moist rocky banks of old watercourses.

Veronica saxatilis, L. This brilliant-flowered species adorned the rocks of Caulochen in great profusion, and occurred also on the rocks in Glen Dole, and in the *corrie* of Ben Red.

Salix ambigua, Ehrh., *S. arenaria*, L., *S. hirta*, Sm., *S. nigricans*, Sm., *S. Forsteriana*, Sm., *S. Davalliana*, Sm., and *S. lanata*, L., were found in Glen Dole and Glen Clova; *S. petræa*, And., *S. Myrsinites*, L., *S. procumbens*, Forbes, and *S. lanata*, L., in Caulochen.

Scheuchzeria palustris, L. In a marsh near Methven, Perthshire.

Potamogeton zosteræfolius, Schum. Rather plentiful in Rescobielake, Forfarshire, bearing flower-spikes in August.

Juncus Balticus, Willd. Very abundant on the sands of Barrie.

Alopecurus alpinus, Sm. This occurred in various localities about Clova, but in greatest quantity and in finest condition on the wet rocks about the waterfalls of Craig Wharral, above the loch.

Phleum alpinum, L. Was gathered on the moist grassy banks of the Feula-burn, above the falls; upon the bank of the Glashie-burn, which runs into the glen of Caness; and very fine about a small waterfall not far from Loch Brandy, called "the *wash* of the *corrie* of Clova."

Carex aquatilis, Wahl.? Abundant on the moist banks of Feulaburn, Clova, and near the head of Caness, rarely attaining the height of a foot, but growing on the margin of the Esk in Glen Clova, to more than double that size.

Carex rariflora, Sm. For this rare species I discovered a new station in the Clova district, namely a bog at the head of Caness, where it occurred in fully greater plenty than in the bog at the head of Glen Dole.

Equisetum variegatum, Schleich. Sands of Barrie, in fruit from April to October.

Splachnum vasculosum, Hedw. On the marshy banks of Feulaburn above, the falls, this moss occurred in fine fructification in July; and in August I detected it in a similar spot on the banks of Loch

Brandy stream, also bearing capsules, rendered conspicuous by their large dark brown apophyses, nestling among the broad and ample foliage.

Weissia nigrita, Hedw. On the sands of Barrie, bearing fruit in September. I also found it with capsules in January, 1844, as well as Didymodon inclinatus, *Sm.*, with which it grows associated.

Grimmia Doniana, Sm. Growing in small tufts, principally in the hollows of rocks and stones, on the Sidlaw-hills, near their summits; plentifully in fruit in April.

Didymodon Bruntoni, Arn. Rocks on the Sidlaw-hills, and about the Reeky Linn, in April and May.

Dicranum polycarpon, Ehrh. Plentiful on rocks in Glen Dole and on Carlowrie mountain, Clova.

Dicranum fulvellum, Sm. On moist rocks in Glen Dole, but rare.

Orthotrichum Drummondii, Hedw. Abundant on the few scattered old trees in Glen Dole.

Bryum trichodes, L. Among the rocks of Caulochen, and more abundantly in moist places on the sands of Barrie. Capsules mature in the latter place in June, in the former in July.

Bartramia gracilis, Flörke. This was gathered in Glen Dole, Caulochen, and Craighall, in July, and bearing profusion of capsules, although these are esteemed rare.

Buxbaumia aphylla, L. On the northern declivity of one of the Sidlaw-hills, where I have gathered it for several successive seasons. It grows in small earthy hollows among the heath, probably where snow has lain late in the spring.

Hypnum molle, Dicks. In Loch Brandy stream, and also in a rivulet in Glen Dole.

Hypnum Crista-castrensis, L. This grows abundantly among the loose rocks at the base of Craig Maid, Glen Dole, a short distance below the falls of the White-water, but only a specimen or two were found with mature capsules, although there appeared to be plenty in a young state.

Jungermannia Taylori, Hook. Plentiful on wet rocks in Glen Dole, along with J. julacea.

Jungermannia setiformis, Ehrh. This fine species I collected in Glen Dole, Caulochen, Ben Red &c., growing upon the rocks in broad tufts or cushions.

Cetraria juniperina, Ach. A single specimen found in Deerhill wood, about eight miles north from Dundee, in April.

Cetraria sepincola, Ach. This is abundant in the same wood, investing trunks and branches of fir-trees, along with C. glauca, but although apothecia are frequent on the latter, only one specimen of the former has as yet been found possessed of them. C. Islandica is scattered plentifully over all the Clova mountains, and occurs sparingly on the Sidlaw-hills. C. nivalis, in the Clova district, is confined to the summit of the Bassies.

Usnea barbata, Ach. Several specimens of this were found with apothecia in the Deerhill wood.

Alectoria jubata, Ach. A specimen or two of this were gathered in the same wood in April, with apothecia, which are different from what has been previously figured as such, and which Sir W. J. Hooker and Mr. Borrer pronounce to be the *true fructification*. As this lichen is very abundant in Deerhill wood, I have good hopes of being able to supply each subscriber to my botanical distribution of 1844, with a fructified specimen. WILLIAM GARDINER.

Dundee, February 12, 1844.

ART. CCVII. — *Notes on Carex teretiuscula, C. paradoxa, C. paniculata, and Mr. Gibson's C. pseudo-paradoxa.* By GEORGE LUXFORD, A.L.S., &c.

(Concluded from p. 897).

The three recognized species of Carex, the names of which stand at the head of these notes, fully exemplify the absolute necessity of studying numerous specimens of plants, from different localities, before we can arrive at anything like a correct estimate of the extent of their variations in habit, or discover the permanent character peculiar to the species to which they respectively belong.* These three species, together with Carex vulpina and Mr. Gibson's C. pseudo-paradoxa, form a small but natural group of British Carices, which agree generally in their compound inflorescence, but more particularly in their perigynia being cordate at the base and stipitate, with the style more or less enlarged in the lower part. The inflorescence of Carex vulpina is tolerably constant; but in C. paniculata it is so exceedingly variable, that the only part on which we can depend as affording a permanent specific character is the fruit.* The fruit indeed is now generally referred to by botanists in their characters and descriptions of the numerous species of Carex, but its value will be peculiarly apparent in a plant, the habit of which is so liable to variation as that of C. paniculata. No dependance can be placed on the inflorescence, for in my specimens this varies from a nearly simple elongated spike, through different gradations, up to a regular panicle with branches between three and four inches long — a variation pointed out by Mr. Babington and other botanists. A good character would seem to be afforded by the tendency of the root to form large tufts; but as this appears also to be the case with the root of the new Carex paradoxa, as well as, although in a less degree, with that of C. teretiuscula; we are obliged, especially for home study, to have recourse to the fruit for a character, and a most satisfactory one is afforded by it. Figures *a.* and *b.* are copied from Leighton's 'Flora of Shropshire,' and well

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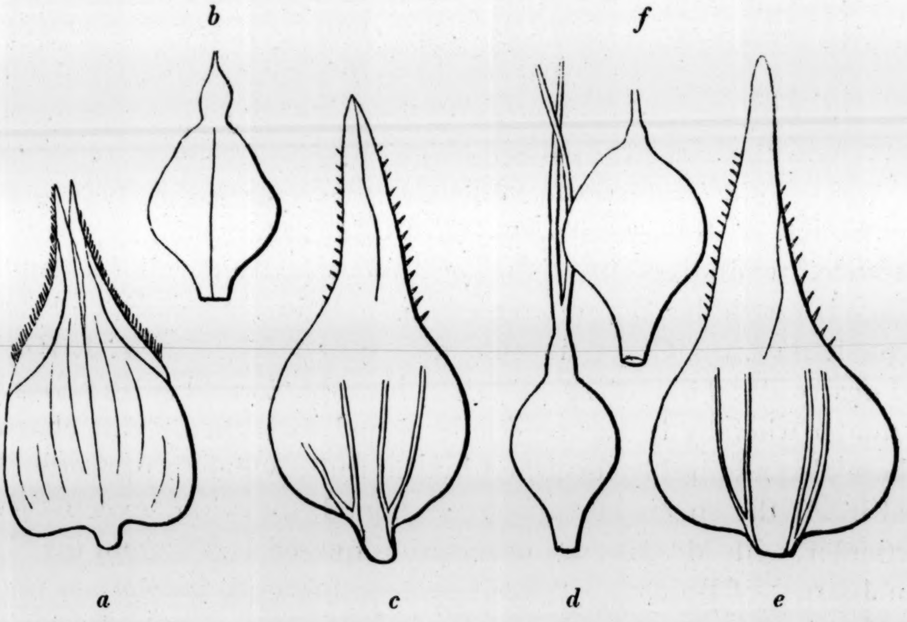
* By the word *permanent*, as used above, must not be understood an *unvarying* adherence to size, form, colour or proportions, but such a degree of general resemblance among themselves, often more readily seen than described, as will enable the student to refer the objects of his investigation to a certain determinate standard, usually denominated the normal form or type of the species. The limits of possible variation from this standard are frequently very wide. A reference to our domestic animals, and our cultivated plants and fruits, will explain my meaning.



a, b. Perigynium and nut of Carex paniculata. *c, d.* The same parts of C. teretiuscula. *e, f.* The same of C. pseudo-paradoxa, *Gibs.*

express the usual form of the perigynium and nut of Carex paniculata: the former with its bidentate beak and somewhat serrated densely fringed wings; and the latter with its ovate outline and the enlarged base of its style. The following is Mr. Moore's description of the fruit of this species, as contrasted with that of C. paradoxa, in the 'London Journal of Botany' for March, 1843. "Fruit *plano-convex*, between deltoid and triangular, with a broad serrated margin extending from the middle to the bidentate beak, broad and subcordate at the base, stipitate, striated on both surfaces; striæ scarcely extending down the slender stipitate point of attachment."

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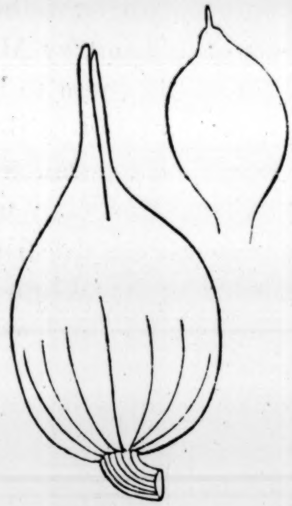
* It may perhaps prevent misunderstanding, if I here repeat that I use the term *fruit* for the perigynium and included nut.



Perigynium and nut of C. paradoxa.

The above remarks on the variable nature of the inflorescence of Carex paniculata, are equally applicable to that of C. paradoxa. The specimens kindly sent me by Mr. Spruce are truly panicled, the branches of the panicle varying in length from a quarter of an inch to about an inch and a half. A specimen from Westmeath, collected by Mr. D. Moore, and kindly forwarded by Mr. W. Wilson, has the branches of the panicle very short, with its spikelets densely aggregated; and in other specimens from the Irish locality, also from Mr. D. Moore, in the possession of the Botanical Society of London, the panicle is reduced to a compound spike, with the spikelets sessile upon the common axis. The panicle of this species, when in fruit, has a peculiarly *neat* appearance, reminding one of that of Juncus cœnosus; in its stem and foliage it resembles Carex teretiuscula. Being intermediate between C. paniculata and C. teretiuscula, as mentioned by Sir W. J. Hooker, and nearly allied to both species, it is desirable to find some permanent character whereby it may be distinguished from them; this character is here also admirably furnished by the fruit, which is perfectly identical in all the specimens above mentioned, agreeing, except in one particular, with Mr. Moore's description quoted below from the 'London Journal of Botany.' "Fruit ovate-subrotund, *gibbous on the inner face*, with a long slender beak, slightly cloven, and edged with a narrow serrulated margin,* base gradually† lengthened out into a strong stipitate point of attachment, which is a continuation of the convex surface, with strong nerves all round, which extend down the stipe." The figure of the perigynium given above, is a profile view from a sketch by Mr. Wilson. The sketch was made from a fruit of Mr. Moore's Irish plant in the possession of Mr. Wilson.

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* The serrulated margin of the beak could not be shown in the figure, from the position of the perigynium, which is represented as lying on its side.

† The base of the perigynium can scarcely be said to be *gradually* lengthened out into the stipes. In this respect, as mentioned by Mr. Wilson, Schkuhr's figure is unsatisfactory, since it represents the base of the perigynium as tapering down into the stipes, instead of cordate, as it really is.

The difference in the outline of the nuts of the two species is sufficiently shown by the figures; there is considerable resemblance between the perigynia of the two when viewed in front, the most obvious difference consisting in the broadly winged and cloven beak of the one and the serrulated emarginate beak of the other. When however the perigynia are viewed in profile, a most striking dissimilarity is observable: in C. paradoxa the lower part being inflated with the inner face gibbous, while in C. paniculata the inner face is nearly flat. It will be seen that the nut scarcely differs in outline from that of C. teretiuscula. For an account of the discovery of this beautiful Carex in Yorkshire, and a notice of its mode of growth in that locality, I beg to refer to Mr. Spruce's note, (Phytol. 842).

Seeing then that these two species are so subject to variation in the character of their inflorescence, we surely cannot feel surprized if we find that their natural ally, C. teretiuscula, is also variable in this respect, as indeed it is, although in a less degree. Some specimens now before me have their spikelets densely aggregated into a short roundish head; in others the compound spike is more or less elongated, even to above an an inch in length: but amid all these variations in the inflorescence, this species is well distinguished from its ally, C. paniculata, both by the fruit and the form of the stem, which, in the latter, has three acute angles with the interstices flat, while the angles of the stem in C. teretiuscula are obtuse, with a projecting line in the centre of two of the sides: thus a transverse section of the one presents an acutely triangular outline, while in the other the outline is roundish. In the form of the stem and general habit C. paradoxa bears a considerable resemblance to C. teretiuscula, but the two are strikingly distinguished by the very different forms of their fruit. And here perhaps it may not be out of place to mention that while they retain their general specific characters, I have found both the perigynium and nut of C. teretiuscula to be subject to greater variations of form and outline than those of either of the two species named above. These variations I am inclined to think may be attributed to the fruit being examined in different stages of maturity. The nut, in what is generally considered its normal form, has a turbinate outline, as represented in Mr. Leighton's figure; but I have as often found it to correspond with Mr. Wilson's figure (*d*, p. 919), and even with greater breadth in proportion to its length than that figure exhibits. There is, however, one part in which I have never observed any variation; and I have taken great pains to verify my observations on this point, because they are at variance with the figure given by Mr. Leighton, and the descriptions of most botanists; I allude to the enlarged base of the style, which is quite as constant, though not so conspicuous, in this species as in either C. vulpina or C. paniculata; but there is no constriction in the lower part of the enlargement, as there is in the two species last mentioned. In stating that the base of the style of C. teretiuscula is always enlarged, I am happy to be supported by the valuable testimony of Mr. Wilson, in whose figure *d* is shown the style with its enlarged base. Schkuhr also has accurately figured the nut of this species (*l*, in tab. D, 19), both in its outline and the swollen base of the style.

The figure of the perigynium of C. teretiuscula in Leighton's 'Flora of Shropshire' represents that part more cordate at the base than Mr. Wilson's sketch, (*c*. Phytol. 919). In this respect also I have observed considerable variations from what may be looked upon as the normal form, which variations, as I have before stated, I am inclined to attribute to a difference in the state of maturity. The number of ribs on the outer side is also variable in a certain degree. The beak is scarcely notched, never deeply cloven, and its marginal wings are narrow, green and serrulate.

With respect to the root of this species there appears to be a slight diversity of opinion among botanists. For while Smith and Leighton agree in calling the root "slightly creeping," and the former author says it is "not densely tufted," and the latter that it is "slightly creeping into scattered simple not dense tufts,"— Mr. Babington describes it as "forming scattered simple tufts, not truly creeping." From this it is, I think, evident that the root, like the inflorescence, is liable to be modified by local and other circumstances; and it appears to me not at all wonderful that these circumstances should also occasionally produce such changes in the habit and general appearance of this species, as well as of others belonging to the same group, as would cause considerable perplexity to a botanist, and lead him to conclude that he had found something new on seeing the plant for the first time in its modified form. Such circumstances, I doubt not, have operated on the plant named Carex pseudo-paradoxa by Mr. Gibson, and caused the deviations from what I believe to be the normal form, that have led that botanist to describe the plant as a new species. The peculiarites in the locality and manner of growth of this plant have already been explained by Dr. Wood, (Phytol. 809); and it appears from the evidence before me, that the root has been acted on in that locality more than any other part of the plant. For in my numerous specimens from that spot I find the inflorescence undergoing precisely the same changes as I have before stated to be common in the true C. teretiuscula. The perigynium is equally variable in its form and markings with that of C. teretiuscula, — the number of ribs varying from four to six or seven, and the breadth at the base being more or less great in proportion to its length; but the perigynia of the two agree precisely in their general outline, their cordate base, and their scarcely notched beak with its serrulated margins Fig. *e* (p. 919) represents a perigynium of the disputed plant; it is the broadest form I have met with, but there are regular gradations from it to the narrow form figured at *c*, and the same form I have not unfrequently met with in the normal state of the species. The nut, too (*f*), so far as I can see, is perfectly identical in the two plants. There are the same variations in outline, and, what is of perhaps greater importance, the base of the style in the two plants is enlarged in precisely the same manner. Figs. *d* and *f* show almost the extreme forms, and these, like the perigynia, I find to be connected by very regular grades.

In addition to the above characters I may remark that the culms, foliage, bracts and other parts, together with the general habit of the two plants, are all strongly indicative of the closest affinity, nay, even of specific identity.

In the 'London Catalogue of British Plants,' by the Botanical Society, published since the above notes were written, the disputed Carex stands as var. *b.* pseudo-paradoxa, under C. teretiuscula. This is doubtless its true place, if allowed to retain an existence separate from the normal form: for as a distinct species it certainly appears to have no claim to a station in our Flora.

Before I conclude I may perhaps be allowed to point out the very slight resemblance between the fruit of this plant and that of Carex paniculata (Phytol. 778, &c.) The comparison was certainly rather unfortunate, except so far as relates to the sectional likeness between the two; for a comparison of fig. *f* with *b*, will at once show a marvellous difference in the outline of the nut of Carex paniculata and that of the disputed plant, a difference, indeed, as great as that existing between the two perigynia represented by *a* and *c*. The discrepancies are so striking, that, coupled as they are with other marks of distinction equally if not still more obvious, we cannot but wonder that the one should be said to have the fruit as in the other, as much as that the normal form of C. teretiuscula should ever have been considered a mere variety of the truly distinct C. paniculata.

In conclusion I beg to return my best thanks to Mr. Wilson for the loan of his sketches and dissections; as well as to those gentlemen who have kindly furnished me with the numerous and beautiful specimens which have been used in my investigations, and without which my researches could not have been carried out. As my only object in undertaking the task was the hope of eliciting truth, I shall be happy to see in the pages of 'The Phytologist' a record of the results of similar researches prosecuted by other enquirers, and that, too, whether such results may tend to establish or overthrow my present conviction that the new plant is merely a variety of the species usually known as C. teretiuscula, *Good.*

GEO. LUXFORD.

2, Ebenezer Row, Kennington Lane,
February, 1844.

ART. CCVIII.—*Note on the supposed identity of Carex fulva*, Goodenough, *with C. speirostachya*, Wahlenberg.* By FRANCIS BOOTT, Esq., M.D., F.L.S., &c.

I HAVE been looking at Carex fulva of Goodenough, with a view to the opinions of Sir James Smith and the continental botanists, who make two species out of the plant originally described by Goodenough in the second volume of the Linnean Transactions, 1792: viz.—

1. C. fulva, *Good.*, and
2. C. speirostachya, *Wahl.*
   C. Hornschuchiana, *Hoppe, &c.*
   C. Hosteana, *Dec. &c.*

Host, Wahlenberg, Swartz, Smith, Hoppe, Reichenbach, Koch, Sprengel, Degland, Decandolle, Brebisson, Boreau, Desporte, Tuckerman, Don, Macreight, admit two species.

Goodenough, Schkuhr, Willdenow, Gaudin and Mutel notice only C. fulva.

Cosson and Germain, Delastre, and Sir W. J. Hooker make the one a variety of the other.

Kunth quotes Hoppe's plant, but was not acquainted with it.

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* Communicated by Edw. Forster, Esq., V.P.L.S., and published with Dr. Boott's permission. We trust our readers will endeavour to aid Dr. Boott in this enquiry by collecting and transmitting to him any specimens they may meet with.—*Ed.*

1. C. *fulva*, Good. Linn. Trans. ii. 177, t. 20, f. 6: 1792. Wahl. Act. Holm.: 1803. Smith, Fl. Brit. iii. 991: 1804. Willd. Sp. Pl. iv. 270: 1805. Wahl. Fl. Suec.: 1806. Schkuhr, Riedgr. T. 67, *figuræ 2 dext.* Hoppe, Car. Ger. t. 41. Smith, Eng. Fl. iv. 107: 1828. Reichenbach, Fl. Ger. ex. i. 65: 1830. Mutel, Fl. Dauphiné: 1830. Sprengel, Syst. Veg. iii. 823: 1826. Brebisson, Fl. Normandie: 1836. Koch, Syn. Fl. Germ. 765: 1837. Kunth, Cyp. 449. Desportes, Fl. de la Sarthe &c. 1838. Boreau, Fl. du Centre de la France: 1840. Macreight, Man. Br. Bot.

   Syn.—C. *distans*, Host. i. t. 77; *fide Reich.* C. *trigona*, Allioni, t. 89, fig. 4; *fide Cosson &c.* C. xanthocarpa, Degland, apud Loisel.; *fide Cosson &c.* C. Hornschuchiana, *β. xanthocarpa*, Cosson et Germain, Obs. sur quelq. Pl. de Paris, p. 20; 1840. Delastre, Fl. du Dep. de la Vienne: 1842.

2. C. *speirostachya*, Wahl. Act. Holm. 1803, (sub C. binervi). Swartz in Herb. Smith. Smith, Eng. Fl. iv. 98: 1828. Tuckerman, Enum. Meth. Car. 13: 1843. Eng. Bot. Don, t. Macreight, Man. Br. Bot.

   Syn.—C. *binervis*, Wahl. Act. Holm. 1803: Fl. Suec. 1826: (*non Smith*). Swartz, Herb. Winch. (*non Sm.*) C. *distans*, Fl. Dan. t. 1049; *fide Smith, Cosson* (*negat Reich.*) C. *Hosteana*, Dec. Cat., Kunth, Spreng. Reich. (*fide Hoppe, MS.*) C. *fulva*, Host, iv. t. 65, *fide Hoppe.* Dec. *fide Boreau.* Schk. Riedgr. T. 67, *fig. sinistr.* Duby, Bot. Gall. 495, *fide Cosson &c.* C. *fulva*, β. Hook. Br. Fl. 429: 1842. C. *Hornschuchiana*, Hoppe, Fl. 1824: Car. Ger. t. 40. Reich.; Koch; Brebisson; Boreau; Desportes; Delastre; Cosson et Germain; *omn. loc. cit.*

   β. *flavescens*, Desportes, loc. cit. Fruct? squamisque flavescentibus; v. s. Herb. Winch e cl. Swartz.

Wahlenberg's name of C. speirostachya has the priority over that of Decandolle and Hoppe. A Swedish specimen so named by Swartz is in Smith's herbarium, and it was adopted in the 'English Flora.' Wahlenberg, in the 'Act. Holm.' and the 'Flora Suecica,' mistook the plant for C. binervis, *Smith*, and a Swedish specimen from Swartz so named is in Mr. Winch's herbarium.

The question is, whether the two plants are to be considered as species or varieties. It will be seen by the authorities quoted, that by far the most of them make the two specifically distinct. Cosson and Germain, from the circumstance of C. Hornschuchiana being the most common form, take that as the type, and reduce the C. fulva, *Good.*, to the var. β., and they are followed by Delastre.

I do not find any British specimens of C. fulva in Smith's herbarium. On the sheet holding his specimens marked "*C. fulva*," there are *three from Sweden, from Swartz*, which answer to the description and figure of Goodenough; and with these are four from "*Prof. Beattie, Aberdeen*, 1799,"—and three others from "*Mackay, moist moorish ground, Scotland*, 1796," all of which I think are clearly referrible to C. speirostachya, having the mouth of the perigynium deeply cleft and membranous at the margin, one of the chief characters which Smith insists upon for that species, but which Hoppe neither expresses in his figure nor notices in his description, and it is equally passed over by Koch and Reichenbach, and indeed by all the authorities; though Wahlenberg, as early as 1803, said "*ore bilobo hyalino.*"

The essential difference of C. speirostachya is a stoloniferous root, a more slender smooth culm, narrower and shorter leaves and bracts (the last never reaching to the male spike), female spikes often three, the lower one subcylindrical (and sometimes compound), perigynium greenish, with a narrower, often smooth, cylindrical rostrum, the orifice of which is two-lobed, and membranous at the margins, the scales dark brown.

C. fulva has a cæspitose root, grows in denser tufts, so as, Hoppe says, to be easily distinguished at a distance, the leaves of a bright green and with the bracts broader and longer (the last reaching to the male spike), the female spikes commonly two and ovate; the culm stouter, with three acute rough angles; perigynium yellowish with a broader conical rougher beak, which is bifid at the orifice, the scales of a cinnamon colour.

It would not be difficult to select specimens of each, having more or less of these characters well marked, but I think there are intermediate forms which it would be embarrassing to determine upon. Cosson and Germain deny that the root of C. Hornschuchiana is stoloniferous. Smith describes the root of C. fulva and of C. speirostachya as creeping. The roughness and smoothness of the culms vary. The orifice of the perigynium in the specimens of C. fulva of Swartz from Sweden, certainly is slightly membranous at the margin, and this character perhaps more or less depends on age. The colour of the perigynium in Swiss specimens of C. speirostachya from Davall, in Smith's herbarium, is yellowish, and Desportes has a variety, *β. flavescens*, with "yellowish perigynium and scales," an example of which I observe in Winch's herbarium from Swartz, sent as C. speirostachya.

I suspect the stouter and rougher culm, the broader and longer bracts and the rougher rostrum of C. fulva, would be found, in a large suite of specimens, to be unsatisfactory characters. I find in C. speirostachya the number of female spikes to vary from one to three, and in Davall's Swiss specimens, in one of those from Swartz from Sweden in Smith's herbarium, and in one from Germany from Baron Römer in my own herbarium, they are from five to six, the upper ones crowded near the male spike; while some are barren at the base and others at top.

C. speirostachya would seem to be more common in this country than C. fulva. The only habitats for the last that I know of, are *Caton, near Shrewsbury*, quoted by Goodenough. *Kent*, sent to me by Mr. Peete; and the *Northern Mountains of Ireland*, found by Macreight and given to Mr. Forster. I cannot satisfactorily quote other places. C. speirostachya I have from Scotland, Wales, Yorkshire and Somersetshire. I shall endeavour to interest British botanists in the subject, to fix the localities of the two plants, and to collect specimens with the *roots and mature fruit*, that the question may be more satisfactorily settled as to specific difference between them.

Mr. Babington, if I mistake not, leaves the question of specific difference undetermined: his book is not by me. F. BOOTT.

Gower Street, March 23, 1843.

[Mr. Babington includes Carex speirostachya under C. fulva: it may not be amiss to give here his characters.—*Ed.*]

"*C. fulva* (Good.); fertile spikes oblong-oval distant with exserted stalks, *bracts* foliaceous *with elongated sheaths*, glumes acute not mucronate, fr. ovate triquetrous ribbed smooth with a *straight* rough-edged bifid *beak*, *nut* obovate trigonous nearly *smooth*, *st. acutely triangular rough-edged.*—*E. B.* 1295.—St. about a foot high. *Barren spike spindleshaped, acute:* glumes obtuse. Lowest bract frequently, but not always, reaching up to the barren spike. Root sometimes creeping.—*β. hornschuchiana;* fertile spikes oblong on longer stalks more distant, fr. more inflated and more strongly ribbed, *st. bluntly triangular smooth* except sometimes near the top, lowest bract longer than its own spike. *C. speirostachya* Sm. *E. B. S.* 2770. C. hornschuchiana *H.* b. 40., *Koch*, *Kunth*, &c. Probably a distinct species. — Boggy places. *β.* Peaty bogs chiefly on mountains. P. VI."—Man. Brit. Bot. 343.

ART. CCIX. — *Notice of 'The London Journal of Botany,' No.* 27, *March*, 1844. By SIR W. J. HOOKER, K.H., LL.D., F.R.A. and L.S., Vice-President of the Linnean Society, and Director of the Royal Botanical Gardens of Kew. London: H. Baillière, 219, Regent Street.

IN the present number of this Journal there is much interesting matter under the head of "Botanical Information;" but as this for the most part consists of notices of new works on Botany, we can do little more than give a sort of running summary of the article.

In Mr. Fielding's 'Sertum Plantarum' a work similar to Hooker's 'Icones Plantarum' in its plan, but containing different subjects, will be given lithographic figures of "entirely new or very little known plants" contained in the author's herbarium. He will be assisted in the work by Mr. Gardner, Superintendent of the Royal Botanic Gardens, Calcutta. The first fasciculus is published.

Another work, similar in character, is the 'Sertum Exoticum' of Miguel, author of 'Observationes de Piperaceis et Melastomaceis.'

The reprint, and translation, of Johnson's 'Iter Plantarum,' has already been announced in our pages (Phytol. 908). The original of this work is exceedingly rare, the copy in the Banksian library now in the British Museum appearing to be the only one in existence. The new edition will be so printed that the English translation will occupy the page opposite the Latin text. The tract contains a journal of probably the earliest botanical excursion undertaken by the Apothecaries' Company. The following localities, among others, were visited by the author: — Erith, Dartford, Gravesend, Rochester, Sheppey, Faversham, Canterbury, Margate, Sandwich and Deal, in Kent: and in Middlesex, Kentish-town, Highgate and Hampstead, including Hampstead-heath and Caen-wood. By way of comparison of the present with the former botanical state of this district, Mr. Irving's List of Hampstead-heath Plants will be appended: facsimiles of the curious illustrations will also be given.

The eighth volume of DeCandolle's 'Prodromus Syst. Nat. Regni Vegetabilis' was announced for last November, but had not been received when this No. of the Journal went to press. This great work has been continued by the son of the lamented author, and the assistance of some of the most eminent botanists of the day has been secured. The eighth volume includes the following families: — Lentibularinæ, Primulaceæ, Myrsineæ, Ægiceraceæ, Theophrasteæ, Sapotaceæ, Ebenaceæ, Styraceæ, Oleaceæ, Jasmineæ, Apocyneæ, and Asclepiadeæ.

In Walper's 'Repertorium Botanices Systematicæ' the arrangement of Decandolle's Prodromus has been followed, and it may be considered a Supplement to that work. The second volume concludes with the Monotropeæ.

Three supplementary numbers to Endlicher's 'Genera Plantarum' have appeared; they contain new genera, as well as corrections of those previously published: the third number includes an arrangement of the Algæ, with their generic characters, a catalogue of species and a list of algological writers.

Schnizlein's 'Iconographia Familiarum Naturalium Regni Vegetabilis' may be considered as supplying the place of Endlicher's 'Iconographia Generum Plantarum,' which was discontinued at the end of the first volume. Two parts are out: "the cryptogamic plates are very beautiful."

Of Jaubert and Spach's 'Illustrationes Plantarum Orientalium' eight livraisons are published.

Lindenberg's 'Monographia Hepaticarum Generis Plagiochilæ' is a work illustrative of a group of Jungermanniæ having for its type our J. asplenioides. The hair-splitting system seems to have been carried to a great length; for the Editor observes that "the slightest change in the form of the leaf, the presence or absence or size of a tooth, direction of the foliage and of the branches, the presence or absence of surculi, &c. &c., all and each are considered tokens of specific distinction, without taking into account the influence of soil, exposure and climate;" and by these means the number of species of Plagiochila is increased to ninety-six! The work is however spoken of in terms of praise for the beauty of its figures and the manner in which the characters and descriptions are drawn up.

The first volume of Grisebach's 'Spicilegium Floræ Rumelicæ et Bithynicæ' is spoken of as "a most valuable addition to our knowledge of Eastern Botany." A letter from the author explains the plan and object of the work.

The first volume of Ledebour's 'Flora Rossica' is out and extends to the end of the Leguminosæ.

A notice is given of the plates to the botanical part of the antarctic expedition of the Astrolabe and the Zelée, in 1837—40, under Admiral d'Urville. They are highly spoken of.

Künze's 'Farrnkräuter' is a supplement to Schkuhr's admirable work bearing the same title. Six fasciculi are published, and contain sixty coloured plates of new Ferns, or such as were not figured by Schkuhr. Künze's 'Riedgraser' is in like manner a supplement to Schkuhr's work on the Carices. Three parts contain thirty plates, with specific characters and descriptions.

Mr. Bateman's 'Orchidaceæ of Guatemala and Mexico,' and Dr. Lindley's 'Sertum Orchidaceum,' are deservedly spoken of in terms of high commendation.

The first No. of Mr. Bentham's 'Botany of the Voyage of H. M. S. Sulphur,' has just appeared: it contains ten plates of new species, from drawings on stone by Miss Drake. It "extends as far as Paronychiaceæ of the Californian plants;" and six quarterly parts will probably complete the Botany.

Under the notice of the first part of Sir W. J. Hooker's 'Species

Filicum,' appear the following remarks on the value of the *venation* in Ferns, which will be interesting to our readers.

> "The introduction of the *venation* into our systematic characters, by no one insisted on with more force and truth than by Mr. Brown, is of the utmost importance in systematic arrangement, and constitutes a new era in the study of this family of plants; but we are not thence to infer that the slightest variation in the direction, or union, or some other circumstance in the veins, is therefore to constitute a mark of generic distinction. The generic importance of the venation is indeed a matter of great difficulty, and I am far from having the vanity to suppose that I have hit upon the correct medium between the placing too little or too much dependence upon the ramification of the veins. In proportion, however, as we advance in our knowledge of the ferns, we shall be able to set a more just estimate upon the importance of venation. The subject is yet in its infancy."

The second part of the work is nearly ready for publication, and will contain the continuation of the Dicksonieæ, including the beautiful and delicate genera, Hymenophyllum and Trichomanes.

The first part of the seventh volume of Hooker's 'Genera Plantarum' contains plates 601—650, with their descriptions. It "is rich in species from Australia and New Zealand; and there are many remarkable forms among them."

The forthcoming work on the British Fresh-water Algæ, by Mr. A. H. Hassall is to form one vol. 8vo., with seventy lithographic plates executed by the author, being magnified views of all the species of "Confervaceæ and Diatomaceæ hitherto discovered inhabiting the soft waters of the British Isles," with an account of the "modes of reproduction, growth, vitality, distribution, uses, classification and species of this extensive and interesting group of plants." Of the drawings it is remarked "that they are eminently adapted to illustrate, in the most satisfactory manner, the structure and mode of reproduction of these curious aquatics."

On the 8th of February letters arrived from Mr. Drummond, who is still engaged in his botanical researches at the Swan River. The letter contained "some singular mosses, allied to the Phasca of Europe in appearance." The plants which were brought in the same ship with the letters had not come to hand when the notice was written.

Mr. Gardner, who left England for Ceylon in September last, has been appointed to the charge of the Botanic Gardens at Kandy, vacant by the recent decease of Mr. Normansell.

Mr. Wm. Gardiner's intention of investigating the botanical treasures of Braemar was briefly noticed in our last.

Three botanists—Mr. C. A. Geyer, Mr. Lüders and Dr. Lindheimer — are about to engage in exploring the most interesting portions of

North-west America; their collections will be offered to subscribers in sets as they come to hand. Mr. Geyer was undecided as to his course and the particular field of his researches when he left St. Louis. Mr. Lüders expects to spend next winter and perhaps the following summer at a Roman-Catholic missionary station on the upper waters of Great Snake river. And Dr. Lindheimer will devote a few years to the exploration of Texas. The former collections of these botanists are stated by Dr. Gray to be "well selected, very complete and finely prepared."

The second article in the number is a "*Description and Figure of a new Species of Oxalis from Columbia, by* W. J. H." This new species, named O. Lindsææfolia, was gathered by Mr. Wm. Lobb. It is said to be allied to O. (Biophytum) sensitiva, *L.*, but distinct from any hitherto published.

"*Description, with a Figure, of Hyobanche sanguinea,* Thunb., *by* W. H. Harvey, Esq." This is a curious, fleshy, parasitical plant, the only species of the genus, and found on roots of various plants in the flats at the Cape of Good Hope, in September and October. The author's figure and description were taken from recent examples. He observes that "the genus is usually placed in Orobancheæ, but the structure of the ovary is so completely analogous to that of Harveya, which Sir W. J. Hooker has referred to the Scrophularinæ, that I do not see how they can be separated." The author further remarks that though the placentæ, strictly speaking, are formed from the introflexed margins of the valves, yet they meet in the centre of the capsule, and are there firmly united into a central piece, a line at right angles with the dissepiment showing where the surfaces coalesce. The distinctions between parietal and central placentæ appear but trifling, since, theoretically, all have the same origin; a central differing from a parietal placenta only in the greater degree of inflexion of the margins of the carpel. In the explanation of the plate the plant is called H. coccinea.

"*Description, with a Figure, of a new species of* Thuja, *the* Alerse *of Chili, by* W. J. H." The tree producing the timber imported from the south of Chili, in the form of shingles or planks, under the name of Alerse or Alerze, appears to have been hitherto unknown to botanists. The author has in his herbarium "a specimen of a Thuja with immature fruit, gathered by Captain King in the Straits of Magelhaens." On this being shown to Mr. Bridges after his return from Chiloe, that gentleman pronounced it to be the true Alerse; and subsequently forwarded to the author a barren specimen of the same plant, which he had gathered in the mountains near the Bay of Valdivia. Being an apparently undescribed species, the author has named it Thuja tetragona, and has given the character and description in the paper under notice. Captain King has given a full and interesting account of the Alerse, and its valuable properties as a timber, in his 'Voyage of the Adventure and Beagle,' (i. 282); which, together with the notices added by Captain Fitzroy, are quoted at length in the article. The tree appears to be one of great height and diameter, for Captain King states that "spars eighty or ninety feet long may be procured, and from eight hundred to one thousand boards are frequently obtained from a single tree; I was told even so many as one thousand five hundred out of one trunk." The planks are "seven or eight feet long, two inches thick, and nine or ten inches wide." The straightness of grain enables the natives to split the tree so as to make it appear as if "dressed with an adze, or even with a plane," but the axe is the only instrument used. The wood is used chiefly for "the floors, partitions and weather-boards of houses, and also for shingling the roof," and for the latter purpose it is said to be very durable: it neither shrinks nor warps, is close-grained and well adapted for furniture: staves for casks are also made from it by the country people. The bark serves to caulk the seams of vessels, and the spars have been found peculiarly strong and valuable for the masts.

Captain Fitzroy's account of the mode of obtaining the Alerse is very interesting. The natives work in family parties, at what are termed *Astilleros*, where the trees are felled. Here they work for four or five weeks, and then return home to attend to their potato-grounds and other domestic affairs, "till their feet heal, and a paralytic motion of the legs, acquired in the Astillero, has ceased," when "they return for another cargo, and work till their feet and limbs can stand it no longer." To this laborious life children are inured from a very early age.

"*Enumeration of the Mosses and Hepaticæ, collected in Brazil by* George Gardner, Esq., *drawn up by* Sir W. J. Hooker, and W. Wilson, Esq." This list contains one hundred and twenty-six mosses (fourteen of which are described as new species), fourteen Hepaticæ and nine lichens.

ART. CCX. — *Notice of 'The London Catalogue of British Plants. Published under the direction of the Botanical Society of London. Adapted for an Index Catalogue to British Herbaria;*

for marking Desiderata in Exchanges of Specimens; for indicating the Species of local districts; and for a guide to botanical collectors, by showing the comparative rarity or frequency of the several species. London: William Pamplin, 45, Frith-street, Soho. 1844.

The title of this Catalogue, which we have given at full length, will sufficiently explain the objects proposed by the compilers. It may be had either as a large broadside, like the earlier edition of the Edinburgh Society's list, or as an 8vo. pamphlet. The arrangement adopted is that of the natural system; and the nomenclature, in general, that of the fifth edition of Hooker's 'British Flora.' The species are numbered continuously from 1 to 1428; "that being deemed the most convenient method in a Catalogue, designed to be used as an Index to herbaria and duplicate stores." For an index to herbaria we have always had a predilection for the plan of numbering the genera continuously, and giving a new set of numbers — beginning with 1 — to the species under each genus: but this may be merely a matter of opinion. The list of Salices has been drawn up by the Rev. J. B. Leefe; and the arrangement of the Rubi was entrusted to Mr. Edwin Lees. The two gentlemen who have undertaken the arrangement of the species of these difficult and ill-understood genera, are well known to have devoted their attention to this particular subject for many years past. A list of about a hundred species is given, being such as are considered "either scarcely naturalised, or not recently found in the localities indicated for them:" and the names of "introduced species, now more or less naturalised, are printed in *italics*." The number of species &c. is thus summed up: —

Indigenous Species, ...	1305
Naturalized Species, ...	132
Excluded Species, ...	102
Varieties, ...	495
	2034

From the numerous enquiries which have been addressed to us respecting a list of plants arranged on the natural system, we have but little doubt that the London Catalogue will attain a wide circulation among British botanists, without at all interfering with any of its predecessors, which may have been arranged on a different plan.

Art. CCXI.—*Varieties.*

461. *Note on Hieracium maculatum.* In your last number (Phytol. 804) Mr. Watson alludes to the luxuriant specimens of Hieracium maculatum in Smith's herbarium as being the effect of cultivation; I have several specimens of the plant collected from the top of the wall of our yard, which are equal to the largest size mentioned in 'English Flora.' There has been a good crop of them every summer, and the general height is from two to three feet. I have not seen any under that size when full grown, except some plants that have vegetated in the joints of the stones on the face of the wall, where there was not enough soil to nourish them, and consequently their smaller size may be easily ascribed to starvation. I gathered some specimens from the joints full two feet high; they had in general from five to seven leaves on the stem before they branched; the flowers numbered from about eighteen or twenty to nearly forty in some of the largest plants, besides numbers of buds not much larger than large pin-heads. The soil in which they grew consisted chiefly of decayed mortar. The wall in question is exposed to the full force of the summer's sun for the whole day, so that the plant must be able to grow in extremely dry situations, since it grew so luxuriantly there. I think that a great many discrepancies in statements of the mode of flowering, and also of the number of flowers, arise from not taking notice at what period the specimens described are gathered. I think if the state of the central flower were mentioned, in connexion with the number of flowers, it would be much more exact. I have generally found that when the central flower was fully expanded, the flowers and buds were generally about twenty in number; when the central flower had its seeds about ripe, as shown by the white down being conspicuous, there were from twenty-four to thirty; when the central flower had dispersed its seeds, they ranged nearer forty. The radical leaves were all decayed at the time the plant was in flower; but though withered, they were easily seen to accord with the description in 'English Flora.' The only discrepancy exhibited was in the arrangement of the floral branches. Smith says "stem *cymose*," "flower-stalks — form an irregular, sometimes compound, *cymose* panicle;" in the specimens I examined there was not one truly cymose, as explained in his 'Introduction,' where he defines a cyme — "its common stalks all spring from one centre," — but rather according with his description of H.

pulmonarium,—"the first partial stalk remaining always much lower than the rest," the central flower above mentioned being always overtopped by the upper floral branches. Another character Smith does not allude to, is the gradual change of the leaves from the "radical ones on long hairy footstalks," to the "scattered linear hairy bracteas." I have called those leaves stem-leaves below the first floral branch, but some of those at the base of other floral branches may also be called stem-leaves, not having departed from the dentated outline of the lower leaves, although much narrower. As to the question of its being a species distinct from H. sylvaticum, with which it is united in the Edinburgh Catalogue, I do not consider myself competent to offer an opinion.—*James Bladon; Pont-y-Pool, Dec.* 1843.

462. *Note on Ornithopus perpusillus?* I was puzzled in the summer of 1842, with a small leguminous plant that I found on the top of one of our mountains, and which I could not then make out. It was not above an inch high in the highest part of it, and all its flowers and legumes were in pairs. I brought a sod of it home, containing about half-a-dozen plants. I earnestly watched them (until they were killed by the frosts of winter) both blossoming and seeding, but they did not deviate from their former size and appearance. The above plant [Ornithopus perpusillus] was the nearest I could find whose description partially agreed with my humble *protegé.* This past summer I determined to test it again; I accordingly sowed some of the seeds in February, March and April, in some old flower-pots. One of the seeds vegetated in about three weeks, the others were from six to ten weeks before they threw up their husks. Some of them had not produced any flowers when they fell under the harshness of the weather in the present week. Some of the smallest had leaves and stems about an inch and a half high; others had the leaves three inches and stems from three to six inches long: one plant in particular threw up a single stem nearly fifteen inches long: but they all produced flowers and legumes in pairs, except two heads, one of which had three flowers and the other five, but they were both unfruitful not producing one legume in either head. From the luxuriant growth of some of the plants, I now suspect that it is a variety of O. perpusillus. *Id. January* 20, 1844.

463. *Note on Campanulas.* During the two last summers having gathered a few plants of some of the few-flowered species when nearly flowering, and transplanted them into some flower-pots for the purpose of observing whether the spreading or closing of the sepals was constant in the same plant;—I observed the following peculiarity in

their flowering, but do not know whether it has been previously noticed or not. After the flower opens, and before the pollen is ripe, the position of the flower changes from pendant or drooping to nearly upright, or so much so as to permit the sun's rays to penetrate to the bottom of the flower: when the pollen is ripe and ready to be scattered, the flower then resumes its original position. Whether this is effected by the twisting of the peduncle, or by reversing the natural curve, I did not observe. The upper part of the peduncle during that period always presented a sigmoid flexure. With regard to the principal object of my attention, the spreading or closing of the calyx-segments, I think they ought to be observed more than they have hitherto been, as I suspect the spreading of their segments may be of use in determining nearly-allied species, as I have observed a constant difference in the whole contour of the flower accompanying the different position of the sepals.—*Id.*

464. *Note on the Equiseta.* I am very much pleased to find that Mr. Newman has paid attention to the different appearances of the section of the different species; as I have always suspected that if fully pursued through all our species, they would very much assist in their discrimination. The descriptions would have been more perfect had it been stated how the tubular passages increase in number from the root upwards. In E. Telmateia particularly they increase from about six or eight in the lowest internodes, regularly with every joint, they become too numerous and too minute to be counted with the unassisted eye. As they increase in number they decrease in size, while the stem does not decrease.—*Id.*

465. *Note on the effects of the late mild winter.* On Christmas-eve and Christmas-day I heard both the thrush and robin singing—one proof out of the many afforded of the unusual mildness of the season, which continued indeed until the end of January; since then we have had a long visit from the three winter graces — frost, snow and ice. In the Christmas week I saw a Fuchsia in full blossom in a garden eighteen miles North-east of York: it was unprotected from the weather, but was on the south side of the house. In my own garden, twelve miles North-east of York, I had strawberries in blossom, but for want, I suppose, of the warmer rays of the sun they were of a dingy yellow colour, instead of white. In a garden at York I saw a lilac-tree fast bursting into leaf; and in all parts of the country the same mild season seems to have prevailed to a degree unexampled in the memory of that exceedingly long-lived person — "the oldest inhabitant."—*F. Orpen Morris; February* 15, 1844.

466. *On Jungermannia Francisci and J. byssacea.* At the suggestion of a correspondent, whom I have been the means of leading into error concerning these two species, I willingly acknowledge that I have not properly understood them, until my friend Mr. Spruce supplied me with genuine examples of J. Francisci, a species which I have never gathered. I must therefore request all my correspondents who have received from me specimens named "J. Francisci," to substitute the name "J. byssacea." In extenuation of the mistake which I have thus committed, let me remark that in the monograph by Sir W. J. Hooker, J. bifida of Schmidel is twice cited, once under J. byssacea, t. 12, and again, doubtfully, under J. Francisci, t. 49, where will be found also the following observation:—"In habit J. Francisci certainly approaches J. byssacea, but the upright growth of the surculi, and the more concave and less deeply notched leaves are of themselves sufficient marks of discrimination; and when the presence of the stipules is taken into consideration, no difficulty in distinguishing them will be found to occur." Now the fact is, that although J. byssacea does sometimes present itself with stipules so very obscure as to escape the ordinary means of detection (in which state I have never failed to recognise it as J. byssacea), there are numerous cases where the stipules are quite obvious (as in specimens gathered by Mr. Cruickshank near Dumfries, and in my own specimens gathered on Delamere-forest and elsewhere), so that there can be no doubt that J. byssacea ought to be placed in that section of the genus which is possessed of stipules. I have long suspected the stipule-bearing plant was not essentially distinct from J. byssacea, but while I was ignorant of the true J. Francisci, I naturally referred it to that species. It now remains to ascertain whether our J. byssacea is the species so called by Roth. On Delamere-forest, Cheshire, I have seen it growing on blocks of sandstone, in small, compact, rounded tufts, the surculi being of course erect, and bearing very evident stipules. — *W. Wilson; Warrington, February* 20, 1844.

467. *On the parasitism of Orobanche.* While in Wales last summer, I obtained very satisfactory evidence of the parasitical habit of Orobanche major and O. barbata. As regards the latter species, there is already a correct representation (as far as it goes) given at tab. 2859 of the 'Supplement to English Botany;' but as nothing is stated in the description beyond the mere fact of parasitism, I may be pardoned for presenting the readers of 'The Phytologist' with the result of my own observations, which were made independently of what had been

done by others. Of all cases of parasitism by means of roots, none are more striking than those which occur in Orobanche, inasmuch as the parasite does not attach itself laterally, but at the very extremity of a root of the nutrient plant; O. barbata seizing upon the roots of ivy, while O. major attaches itself to the roots of Ulex europæus. In the latter case, the root of Ulex becomes very much swelled at the point of contact; a longitudinal section of it and of the scaly rhizoma of the Orobanche, presented the appearance of such complete union of the cellular tissue of both plants, that the exact line of junction could not be absolutely determined; and it seemed as if even the vascular tissue of the two plants had become intimately blended; the base of the rhizoma of the Orobanche being continuous with the root of the Ulex. It is difficult to comprehend in what way the seeds of Orobanche are brought into contact with the roots of its prey, unless it be by the agency of earthworms or slugs. Perhaps some one who has facilities for the purpose, will undertake to study the germination of these plants, for the benefit of the readers of 'The Phytologist.'—*Id.*

468. *Note on Villarsia nymphæoides*, (Phytol. 904).* The Villarsia nymphæoides is met with in an old deserted bed of the Clyde below Govan, on the north side of the river, and in the dam very abundantly between Partrick and Govan-ferry, immediately west of York-hill, where it has been abundantly found in both places for more than twenty years; but I remember well its introduction. At a time when we were cleaning out the pond in the old Botanic Garden, I filled my specimen-box with it, and going at the time to the Highlands, I emptied it out in both these places before going on board the steam-boat at Govan-ferry. I also put in some of the Stratiotes and Nuphar lutea, both of which continue to exist, although they have not spread like the other. Thirty-five years ago the Rev. Mr. M'Ritchie, of the parish of Cluney (Perthshire), introduced the Villarsia into the Loch of Cluney, and it has spread over several acres of its surface. We put a good many plants into the Kelvin three years ago; and last summer it made some appearance opposite the garden. — *Stewart Murray; Botanic Garden, Glasgow, March* 9, 1844.

469. *Effect of cultivation on Hyacinthus non-scriptus*, Linn. When this plant is taken from its native woods, and planted in an ordinary flower-bed, I have reason to believe that the following changes take place in its habit and characters; namely, the inflorescence ceases to be either secund or drooping, and the flowers become more widely

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* Communicated by Professor Balfour.

campanulate. I have nowhere read any notice of this change, nor am I aware either of the length of time required to produce it, or if it be a uniform result. The observations on which my remarks are founded, having been made many years since, and not being in all points perfectly conclusive, I am now on the point of renewing them, and my reason for bringing the subject before the readers of 'The Phytologist' at this time, instead of waiting until I have made the experiment, is, that others may try it as well as myself. My own intention is to obtain some of the roots from a wood some time during the next fortnight, and plant them in various aspects of my garden, and in soils of different kind; and I should recommend others who make the experiment, to vary it in the same manner. I should also advise their obtaining the bulbs immediately on reading this note, as it will very soon be too late for removing the roots in time for this year's flowering.—*T. Bell Salter; Ryde, March* 11, 1844.

470. *Note on the arrangement of Mosses for the Herbarium.* The plan mentioned by Mr. Townsend in your last number (Phytol. 901) of arranging mosses by glueing all the specimens to the paper, is very little used I think by any one who attempts to *study* that tribe of plants; for no modern muscologist would be satisfied with the examination of a moss when so fastened down, however white and transparent the paper may be; nor am I aware of any one who aims at investigating them by putting his herbarium-sheets under the microscope. The plan of keeping mosses loose in cases or pockets, is certainly a step in advance of the above; but the most desirable method is perhaps found in combining the two: this is productive of a greater degree of neatness, and offers better facilities for reference. Specimens in various stages of growth, and from different localities, may be glued down so as to present at a glance the general outline and prominent characters of a species; while two small cases or pockets should also be attached to the paper, one containing loose specimens for minute examination, the other dissections of the peristome &c., mounted between layers of talc for the microscope. It is very useful to have a small book containing a specimen or two of each species, either glued down or enclosed in similar cases, to carry in the pocket for reference, when the principal collection may not be at hand. — *J. Sidebotham; Manchester, March* 13, 1844.

471. *Alectoria jubata.* I have much pleasure in communicating that my hope is already realized of being able to supply my subscribers to this season's botanical distribution, with specimens of Alectoria jubata bearing *true fructification*, (Phytol. 918). This interesting

rarity I collected in Deerhill-wood, on the 5th of March, whilst wading above knee-deep in snow! The day was fair and frosty, and the hard surface of the snow on the roads tempted me to the enjoyment of the walk; and being desirous of a peep into the woods, to mark the difference of their wintry aspect from that of the genial summer, when every tree is loaded with verdure, and alive with the music of birds, I prolonged my walk to the base of the Sidlaws, and entered the woodlands. The scene was bleak and cheerless. The young leaves were yet cradled in their buds. The breeze indeed was there, but its softness was wanting, and no breath of sweet flowers nor song of happy birds, did it diffuse around, as it sullenly moaned through the dark pines. Even the mossy carpet was wanting, as snow covered the ground to the depth of several feet, which, being here quite soft, rendered it necessary to *wade* instead of walk, and consequently made one's progress slow and fatiguing. Yet even here, in the midst of winter's sterility, the lover of Flora could enjoy a rich banquet, for the trees are in many places profusely decorated with Lichens. Besides the Alectoria I have here collected the following species, *all in fructification*, although on some of them the apothecia were but sparingly developed. Usnea barbata, U. florida, Cetraria glauca, C. sepincola, Borrera furfuracea, Parmelia physodes, Evernia prunastri and Ramalina fastigiata. — *William Gardiner;* 40, *Overgate, Dundee, March* 18, 1844.

ART. CCXII.—*Proceedings of Societies.*

BOTANICAL SOCIETY OF LONDON.

March 1, 1844. — J. E. Gray, Esq., F.R.S., &c., President, in the chair. Various donations were announced, including some species of Algæ from Cape Raceife, Algoa Bay, from Mr. Bowerbank.

Read the conclusion of the paper commenced at the last meeting, being 'A Synoptical View of the British Fruticose Rubi, arranged in Groups, with explanatory remarks, by Edwin Lees, Esq., F.L.S.' It is unnecessary to enter into further details respecting Mr. Lees' views on the groups, species and varieties of British Rubi, as they are now before the botanical world, in 'The London Catalogue of British Plants,' just published by the Botanical Society. The paper was accompanied by drawings and numerous specimens, the latter are deposited in the Society's herbarium.—*G. E. D.*

THE RAY SOCIETY.

This Society has issued a prospectus and list of officers and members, which we give below. The names of Dr. Robert Brown, Mr. Bennett and Mr. Borrer are a tower of strength to this undertaking, and will doubtless induce many of our botanists to enroll themselves as members.

I. THAT this Society shall be called THE RAY SOCIETY; and that its object shall be the promotion of Natural History, by the printing of original works in Zoology and Botany; of new editions of works of established merit; of rare Tracts and MSS.; and of translations and reprints of foreign works which are generally inaccessible from the language in which they are written, or from the manner in which they have been published.

N.B.—It will be a direction to the Council that they shall not print anything that appears to them suitable to the Transactions of established Societies; nor any work which a respectable publisher shall undertake to publish without charge to the author.

II. Every subscriber of One Guinea annually to be considered a Member of the Society; and no Member shall incur any liability beyond the annual subscription.

III. That the annual subscriptions shall be paid in advance, and considered to be due on the 2nd day of February in each year: and that such Members as do not signify their intention to withdraw from the Society before the 2nd day of June shall be considered to continue Members, and be liable for the year's subscription.

IV. The management of the Society shall be vested in a Council of Twenty-one Members, of whom one third shall have their stated residences in London. The Council to be elected for two years, when one third shall retire.

V. That the Council hereafter shall be elected by the Members, at a meeting to be held at the time and place of the meeting of the British Association for the Advancement of Science.

VI. That the Council shall elect a Secretary, who shall be *ex officio* a Member of the Council.

VII. The annual subscription shall be deposited in a chartered bank, in the name of the Secretary and two Members of the Council: and the fund shall be exclusively applied in publishing such works as the Council shall sanction.

VIII. The accounts of the receipt and expenditure of the Society shall be examined annually by two Auditors appointed by the Council, the Auditors to be Members of the Society who are not Members of Council, and their statement circulated among the Subscribers.

IX. That the number of copies of the Society's publications shall, unless otherwise directed by the Council, be limited to the number of actual subscribers who shall have been enrolled, and paid their subscriptions, on or before the 2nd day of June.

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